Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Original) A method for determining driving wheel torque for a vehicle having a hybrid electric powertrain, the powertrain comprising an engine, an electric motor, a battery, a generator and gearing that define plural torque flow paths from the engine and the motor to a torque output shaft, the method comprising:

calculating angular acceleration of the motor;

calculating angular acceleration of the engine;

calculating moments of inertia of the motor and the generator;

calculating static gearing output torque and motor torque; and

estimating total wheel torque as a function of operating variables including inertia of both the motor and the generator, angular acceleration of the engine, motor torque and torque ratio from the motor to the vehicle wheels.

2. (Original) A method for determining driving wheel torque for a vehicle having a hybrid electric powertrain with a parallel operating mode, the powertrain comprising an engine, an electric motor, a battery, a generator and gearing that define plural torque flow paths from the engine and the motor to a torque output shaft, the method comprising:

calculating angular acceleration of the motor;

calculating angular acceleration of the engine;

calculating moments of inertia of the motor, the engine and the generator;

calculating static gearing output torque and motor torque; and

estimating total wheel torque as a function of

operating variables including inertia of both the motor and the generator, angular acceleration of the engine, motor torque and torque ratio from the motor to the vehicle wheels.

3. (Original) A method for determining driving wheel torque for a vehicle having a hybrid electric powertrain with a non-parallel operating mode, the powertrain comprising an engine, an electric motor, a battery, a generator and gearing that define plural torque flow paths from the engine and the motor to vehicle wheels, the method comprising:

calculating angular acceleration of the motor;

calculating angular acceleration of the engine;

calculating moments of inertia of the motor and the generator;

calculating static gearing output torque and motor torque during operation in the non-parallel mode as a function of torque ratio from the generator to the motor and generator torque; and

estimating total wheel torque as a function of operating variables including inertia of both the motor and the generator, angular acceleration of the engine, motor torque and torque ratio from the motor to the vehicle wheels.

4. (Original) A method for determining driving wheel torque for a vehicle having a hybrid electric powertrain with non-parallel and parallel operating modes, the powertrain comprising an engine, an electric motor, a battery, a generator and gearing that define plural torque flow paths from the engine and the motor to vehicle wheels, the method comprising:

calculating angular acceleration of the motor;

calculating angular acceleration of the engine;

calculating moments of inertia of the motor, the engine and the generator; and

calculating static gearing output torque during

operation in the parallel mode as a function of operating variables including torque ratio from the generator to the motor, engine torque, engine moment of inertia and engine angular acceleration.

5. (Original) The method set forth in claim 1 wherein estimated total wheel torque is computed in accordance with the equation:

$$\tau_{total\_wheel}=T_{mot2wheel}*(\tau_{mot}-\tau_{p@mot}+J_{gen\_couple}*dot\omega_{eng}-J_{mot\_eff}*dot\omega_{eng})$$

where:

τ_{total_wheel} = total wheel torque estimate;

$T_{mot2wheel}$ = torque ratio from motor to wheels;

$\tau_{p@mot}$ = torque @ motor shaft;

J_{gen_couple} = coupled moment of inertia of generator and the gear element to which it is connected;

$dot\omega_{eng}$ = engine angular acceleration;

J_{mot_eff} = sum of the lumped motor and gearing inertia and the lumped generator inertia reflected at the motor; and

τ_{mot} = motor torque.

6. (Original) The method set forth in claim 2 wherein estimated total wheel torque is computed in accordance with the equation:

$$\tau_{total\_wheel}=T_{mot2wheel}*(\tau_{mot}-\tau_{p@mot}+J_{gen\_couple}*dot\omega_{eng}-J_{mot\_eff}*dot\omega_{eng})$$

where:

τ_{total_wheel} = total wheel torque estimate;

$T_{mot2wheel}$ = torque ratio from motor to wheels;

$\tau_{p@mot}$ = torque @ motor shaft;

J_{gen_couple} = coupled moment of inertia of generator and the gear element to which it is connected;

$dot\omega_{eng}$ = engine angular acceleration;

J_{mot_eff} = sum of the lumped motor and gearing inertia and the lumped generator inertia reflected at the motor; and

τ_{mot} = motor torque.

7. (Original) The method set forth in claim 3 wherein estimated total wheel torque is computed in accordance with the equation:

$$\tau_{total\_wheel}=T_{mot2wheel}*(\tau_{mot}-\tau_{p@mot}+J_{gen\_couple}*dot\omega_{eng}-J_{mot\_eff}*dot\omega_{eng})$$

where:

τ_{total_wheel} = total wheel torque estimate;

$T_{mot2wheel}$ = torque ratio from motor to wheels;

$\tau_{p@mot}$ = torque @ motor shaft;

J_{gen_couple} = coupled moment of inertia of generator and the gear element to which it is connected;

$dot\omega_{eng}$ = engine angular acceleration;

J_{mot_eff} = sum of the lumped motor and gearing inertia and the lumped generator inertia reflected at the motor; and

τ_{mot} = motor torque.

8. (Original) The method set forth in claim 3 wherein static gearing output torque is computed in accordance with the equation:

$$\tau_{p@mot}=T_{gen2mot}*\tau_{gen}$$

where:

$\tau_{p@mot}$ = torque at motor shaft;

$T_{gen2mot}$ = torque ratio from generator to motor shaft; and

τ_{gen} = generator torque.

9. (Currently amended) The method set forth in claim 4 wherein static gearing output torque is computed in accordance with the equation:

$$\tau_{p@mot} = -T_{gen2mot} * (\tau_{eng} - J_{eng} * dot\omega_{eng})$$

where:

$\tau_{p@mot}$ = torque at motor shaft;

$T_{gen2mot}$ = torque ratio from engine to motor shaft;

τ_{eng} = engine torque;

J_{eng} = lumped moment of inertia of engine and the element of the gearing to which it is ~~connection~~ connected; and

$dot\omega_{eng}$ = engine angular acceleration.

10. (New) The method set forth in claim 4 wherein estimated total wheel torque is computed in accordance with the equation:

$$\tau_{total\_wheel} = T_{mot2wheel} * (\tau_{mot} - \tau_{p@mot} + J_{gen\_couple} * dot\omega_{eng} - J_{mot\_eff} * dot\omega_{eng})$$

where:

τ_{total_wheel} = total wheel torque estimate;

$T_{mot2wheel}$ = torque ratio from motor to wheels;

$\tau_{p@mot}$ = torque @ motor shaft;

J_{gen_couple} = coupled moment of inertia of generator and the gear element to which it is connected;

$dot\omega_{eng}$ = engine angular acceleration;

J_{mot_eff} = sum of the lumped motor and gearing inertia and the lumped generator inertia reflected at the motor; and

τ_{mot} = motor torque.

11. (New) The method set forth in claim 1 wherein static gearing output torque is computed in accordance with the equation:

$$\tau_{p@mot}=T_{gen2mot}*\tau_{gen}$$

where:

$\tau_{p@mot}$ = torque at motor shaft;

$T_{gen2mot}$ = torque ratio from generator to motor shaft; and

τ_{gen} = generator torque.

12. (New) The method set forth in claim 2 wherein static gearing output torque is computed in accordance with the equation:

$$\tau_{p@mot}=T_{gen2mot}*\tau_{gen}$$

where:

$\tau_{p@mot}$ = torque at motor shaft;

$T_{gen2mot}$ = torque ratio from generator to motor shaft; and

τ_{gen} = generator torque.